PHOTOFACT® Technical Service Data

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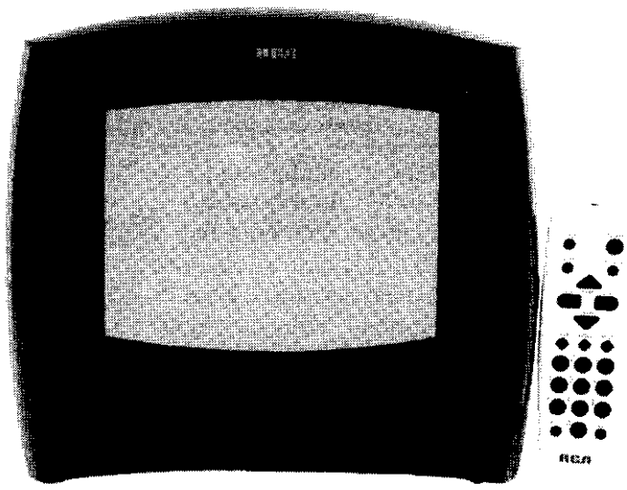
RCA

Model E09305WHF24 (Chassis TX826JD)



Essential coverage for servicing a television receiver...

- Schematics
- Component locations
- Parts list

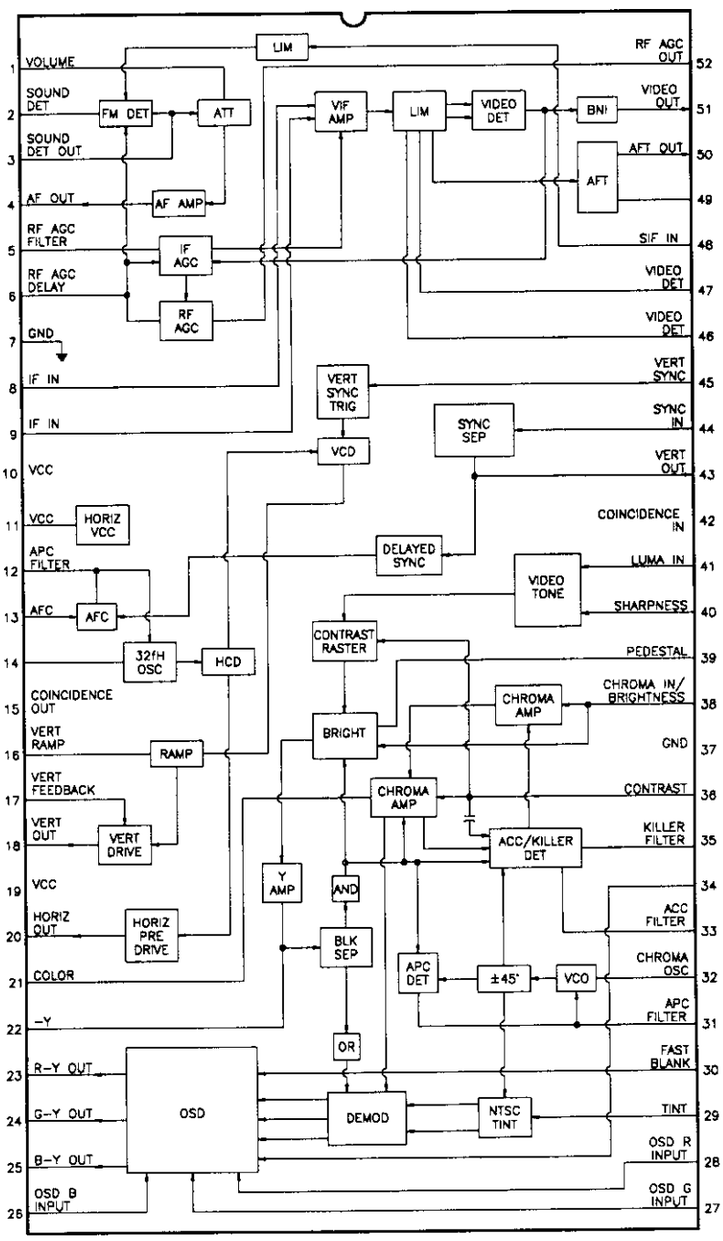
Coverage includes this additional model and chassis:

MODEL	CHASSIS
E09305WHC24	TX826JD

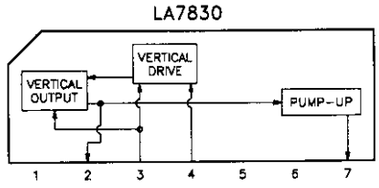
MARCH 1996 SET 3624

IC FUNCTIONS

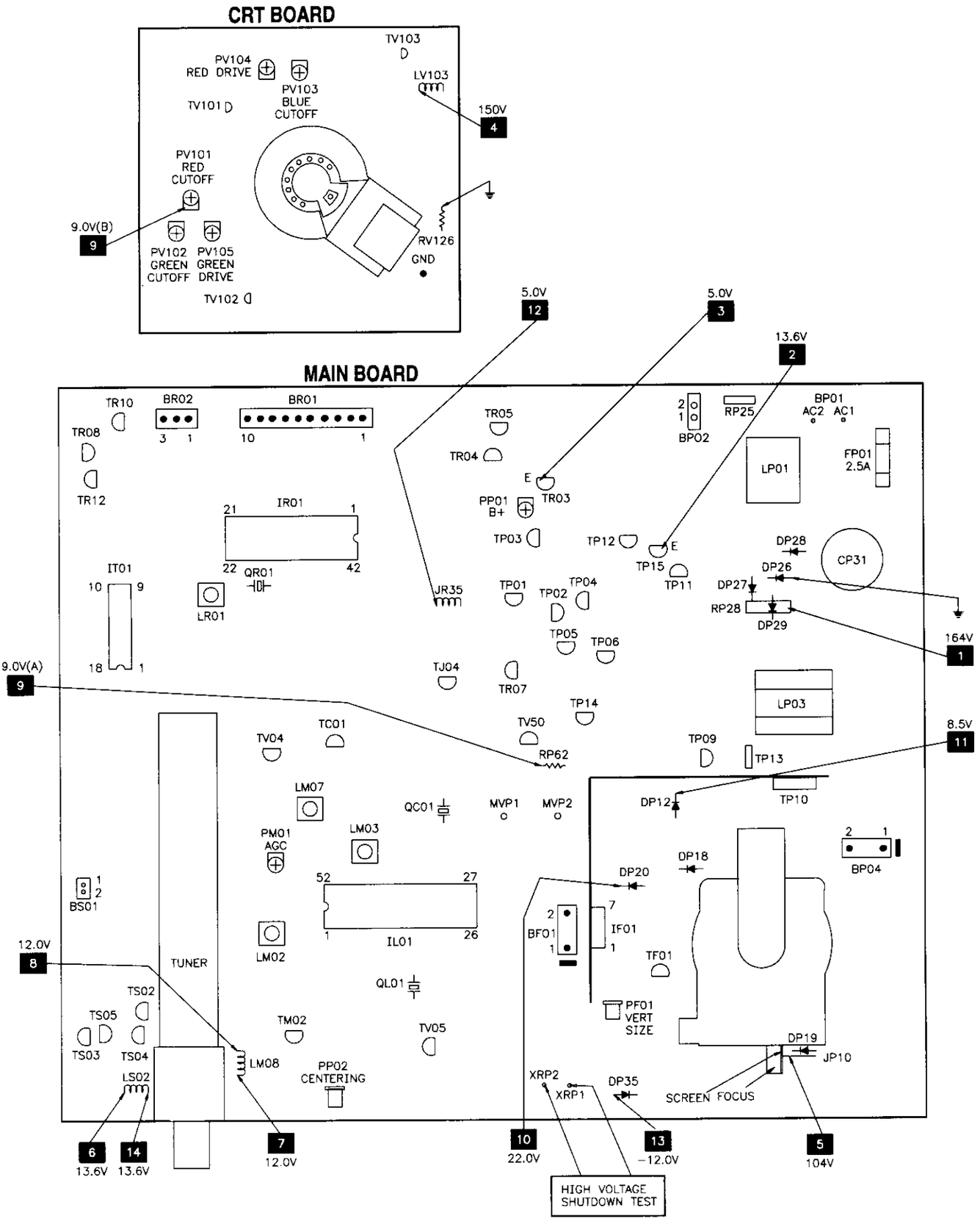
IL01
M52303ASP



IF01
LA7830



PLACEMENT CHART



RCA

MODEL E09305WHF24 (CHASSIS TX826JD)

SEMICONDUCTORS

(Select the replacement that gives the best results.)

Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.
DC01	1N4148	198589	NTE519	ECG519	SK3100
DF04	-	198597	NTE116	ECG116	SK3313
DK31	1N4148	198589	NTE519	ECG519	SK3100
DM03	-	198600	-	-	-
DP02	-	220637	-	-	-
DP04, 05	1N4148	198589	NTE519	ECG519	SK3100
# **DP06**	-	223083	-	-	-
DP10	-	225441	-	-	-
DP11	1S1834	210226	NTE552	ECG552	SK9000
DP12	BA157	198590	NTE558	ECG558	SK3998
# **DP13**	-	198596	-	-	-
DP14	1S1834	210226	NTE552	ECG552	SK9000
DP15, 16	-	198597	NTE116	ECG116	SK3313
DP18	1S1834	210226	NTE552	ECG552	SK9000
	BA158	198598	NTE558	ECG558	SK3998
DP19	BA158	198598	NTE558	ECG558	SK3998
DP20	1S1834	210226	NTE552	ECG552	SK9000
DP21	-	198597	NTE116	ECG116	SK3313
# **DP26** Thru					
# **DP29**	1N4004	209919	NTE116	ECG116	SK3312
DP35, 37	1N4148	198589	NTE519	ECG519	SK3100
DP46, 54	1N4148	198589	NTE519	ECG519	SK3100
DP67	-	220637	-	-	-
DP75	-	198590	NTE580	ECG580	-
DP76, 77, 78	1N4148	198589	NTE519	ECG519	SK3100
DR02	1N4148	198589	NTE519	ECG519	SK3100
DR04	-	220638	-	-	-
DR05	-	220639	-	-	-
DR06, 07	1N4148	198589	NTE519	ECG519	SK3100
DT01, 02	1N4148	198589	NTE519	ECG519	SK3100
DV52	-	220638	-	-	-
# **DX01**	1N4148	198589	NTE519	ECG519	SK3100
# **DX02**	-	159429	NTE5019T1	ECG5019T1	SK9970
# **DX03**	1N4148	198589	NTE519	ECG519	SK3100
IF01	LA7830	188086	NTE1773	ECG1773	SK9752
IL01	M52303ASP	210543	-	-	-
IR01	ST6497BB1/BHS	227722	-	-	-
TC01	BC548B	198743	NTE123AP*	ECG123AP*	SK3854*
TF01	BC548C	198746	NTE199*	ECG199*	SK3245*
TJ04	BC558B	198745	NTE159*	ECG159*	SK3466*
TM02	BF370R	206017	-	-	-
TP01	BC548C	198746	NTE199*	ECG199*	SK3245*
TP02	BC558C	198747	NTE159*	ECG159*	SK3466*
# **TP03**	BC548C	198746	NTE199*	ECG199*	SK3245*
TP04	BC558C	198747	NTE159*	ECG159*	SK3466*
TP05, 06	BC548C	198746	NTE199*	ECG199*	SK3245*
TP09	BC337-16	216099	NTE123AP*	ECG123AP*	SK3854*
TP10	S2000A3	198794	-	-	-
	S2000AF	227518	-	ECG2354%	-
TP11	BC558C	198747	NTE159*	ECG159*	SK3466*

 # For SAFETY use only equivalent replacement part.

* Lead configuration may vary from original.

% Use Insulating hardware supplied with replacement.

SEMICONDUCTORS continued

(Select the replacement that gives the best results.)

Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.
TP12	BC548C	198746	NTE199*	ECG199*	SK3245*
TP13	BD434	220673	NTE153	ECG153	SK3274
TP14	BC337-16	216099	NTE123AP*	ECG123AP*	SK3854*
TP15	-	198752	-	-	-
TR03	BC548B	198743	NTE123AP*	ECG123AP*	SK3854*
TR04, 05	BC548C	198746	NTE199*	ECG199*	SK3245*
TR07	BC337-16	216099	NTE123AP*	ECG123AP*	SK3854*
TR08, 10, 12	BC548B	198743	NTE123AP*	ECG123AP*	SK3854*
TS02	BC548A	220674	NTE199*	ECG199*	SK3245*
TS03	BC337-16	216099	NTE123AP*	ECG123AP*	SK3854*
TS04	BC327-25	220675	NTE298	ECG298	SK3450
TS05	BC548A	220674	NTE199*	ECG199*	SK3245*
TV04, 05, 50	BC558B	198745	NTE159*	ECG159*	SK3466*
TV101, 02, 03	BF392	198763	NTE287	ECG287	SK3433

* Lead configuration may vary from original.

CAPACITORS & ELECTROLYTICS

	Item No.	Rating	Mfr. Part No.
	CC02, 03, 04	100pF 5% 50V N750	198579
	CC05	33pF 5% 50V NPO	210153
#	**CF01**	470µF 20% 25V	220623
	CM16	8.2pF 10% 50V NPO	202047
	CM18	68pF 5% 50V N750	198554
	CM19	47pF 5% 50V N750	198555
#	**CP02**	.1 20% 250V	220625
#	**CP06**	.068 20% 250V	220627
#	**CP16**	.068 10% 400V	225439
#	**CP17**	100µF 20% 160V	194728
#	**CP18**	.0066 1.6kV	198562
#	**CP20**	1000µF 20% 16V	185862
#	**CP22**	22µF 20% 100V	210156
#	**CP23**	1000µF 20% 25V	190721
#	**CP26, 27**	.0015 10% 1kV	198565
#	**CP31**	330µF 20% 200V	182286
#	**CP40**	.36 5% 250V	198567
#	**CP41**	1000µF 20% 25V	190721
#	**CP53, 54**	680pF +50% -20% 2kV	225440
#	**CP55**	.001 +50% -20% 1kV	198570
	CS02	390pF 5% 50V N750	220630
#	**CS06**	.1 10% 63V	220631
	CV36	27pF 5% 50V NPO	220634
#	**CV104**	.001 +50% -20% 2kV	198806
#	**CX02**	.1 10% 63V	198551

 # For SAFETY use only equivalent replacement part.

CABINET PARTS

	Item	Mfr. Part No.
	Buttons	228965
#	Cabinet Front	MK1829
#	Cabinet Rear	BK1830

 # For SAFETY use only equivalent replacement part.

CONTROLS & RESISTORS

	Item No.	Function/Rating	Mfr. Part No.	NTE Part No.
	PF01	500 Vertical Size	198627	-
	PM01	10K AGC	198628	-
#	**PP01**	1000 B+	198629	-
	PP02	150 Centering	225631	
	PV101	2500 Red Cutoff	216051	-
	PV102	2500 Green Cutoff	216051	-
	PV103	2500 Blue Cutoff	216051	-
	PV104	250 Red Drive	216052	
	PV105	250 Green Drive	216052	
	RC25	10K 5% 1/4W	-	QW310
		10K 2% 1/4W	829310	QW310
#	**RF01**	2.7 5% 1/2W	198648	HW2D7
	RF05	68.1K 1% .16W	198790	-
#	**RF15**	22K 5% .16W	198714	-
#	**RP06**	220 5% 1/4W	209917	QW122
#	**RP07**	6810 1% .16W	220649	-
#	**RP08**	107K 1% .4W	224232	-
	RP12	82.5K 1% .16W	220651	-
#	**RP18**	8200 5% 1/4W	175366	QW282
#	**RP19**	9100 5% 1/4W	829291	QW291
#	**RP23**	5.6 5% 2W	220652	2W5D6
#	**RP24**	1.8M 10% 1/2W	220333	HW518
#	**RP25**	8.4 Cold PTC	198688	-
#	**RP28**	2.7 10% 5W Wirewound	220653	5W2D7
#	**RP32**	1000 10% 1/2W	206386	HW210
#	**RP34**	33 5% 1W	198695	1W033
#	**RP39**	220 5% .43W	220656	-
#	**RP53**	.39 5% 1/4W	198701	-
#	**RP55**	10 5% .35W	210185	-
#	**RP56**	15K 5% 1/4W	198703	QW315
#	**RP59**	100 5% .16W	198660	-
#	**RP61**	3300 5% .16W	198638	-
#	**RP68**	.68 5% .4W	216049	-
	RR11	1500 5% 1/4W	-	QW215
		1500 2% 1/4W	829215	QW215
	RR37, 39	10K 5% 1/4W	-	QW310
		10K 2% 1/4W	829310	QW310
	RR64, 65, 67	10K 5% 1/4W	-	QW310
		10K 2% 1/4W	829310	QW310
	RR77	680 2% .16W	220665	-
#	**RS07**	270 5% 1/4W	220648	QW127
	RV54	150K 1% 1/4W	227625	-
#	**RV100**	2200 5% 1/2W	176632	HW222
#	**RV104, 05, 06**	12K 5% 2W	183193	2W312
#	**RV109**	120 5% 1/4W	210196	QW112
	RV122, 24	1500 2% 1/4W	829215	QW215
#	**RV127**	.47 5% 1/2W Fusible	210248	-
#	**RX02**	10K 1% 1/4W	198739	-
#	**RX03**	7500 1% 1/2W	198741	-
#	**RX04**	2200 5% .16W	198698	-
#	**RX05**	100 5% .16W	198660	-
#	**RY01**	2200 5% 1/2W	176632	HW222

 # For SAFETY use only equivalent replacement part.

PARTS LIST continued

COILS & TRANSFORMERS

	Item No.	Function/Rating	Mfr. Part No.
#	**DY1**	Yoke Horiz 2.7mH Vert 28.5mH	198776
	JR35	100µH	220641
	LM02	Sound Detector	198613
	LM03	Video Detector	206385
	LM04	.82µH	198615
	LM07	AFT	210787
	LM08	47µH	198617
#	**LP01**	-	228335
	LP02	6µH	198619
#	**LP03**	Switch Mode	224231
#	**LP04** (1)	Horizontal Output	198621
#	**LP05**	112µH	198623
	LP06	50µH	198624
	LP11	Ferrite Bead	224167
	LP12	Ferrite Bead	224167
	LP13	6µH	198619
#	**LP99**	Degaussing	198785
	LR01	35µH	205430
	LS02	47µH	198617
	LT01	Ferrite Bead	220643
	LV01	1.5µH	198783
	LV02	12µH	198782
	LV103	150µH	210247
#	**TS01A**	Earphone	198801
	VV01	Delay Line	198753

 # For SAFETY use only equivalent replacement part.

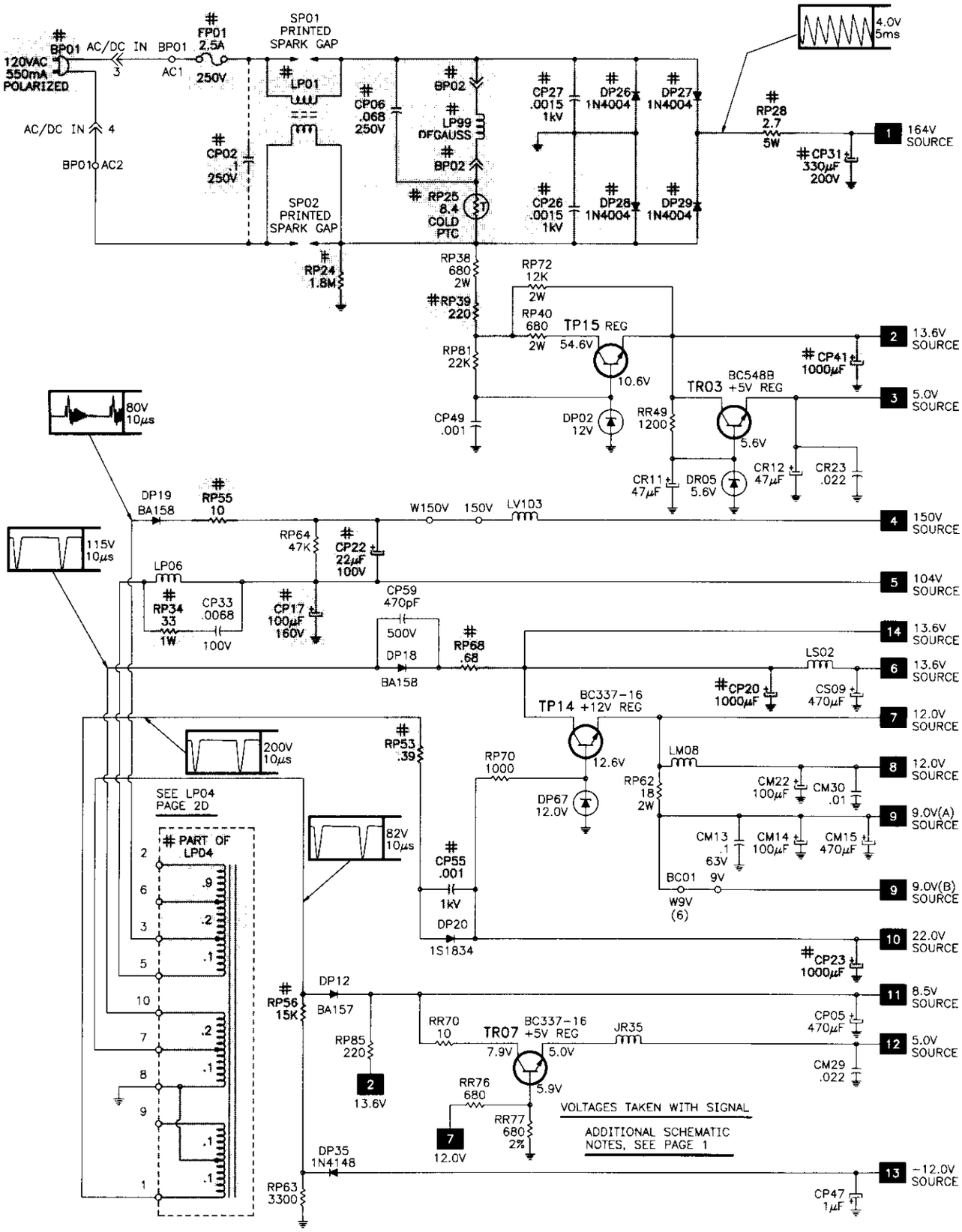
(1) Focus and screen controls are part of LP04.

MISCELLANEOUS

	Item No.	Description	Mfr. Part No.	Notes
#	**BP01**	Line Cord	226566	AC, Polarized
#	**ES01**	Jack	198802	Earphone
#	**FP01**	Fuse	198605	2.5Amp, 250V, Slow Blow
	IK01	Receiver	225032	Remote
	QC01	Filter	198630	3.58MHz
	QL01	Crystal	198633	500kHz
	QM01	Filter	210250	SAW
	QM02	Filter	210239	4.5MHz
	QR01	Filter	210549	8MHz
	QV01	Filter	205431	4.5MHz
	SP1	Speaker	-	1.5" X 3.75", 16 Ohm, 4W
		Speaker	198787	16 Ohm, 2W
	SW01	Switch	216098	Power
	SW02	Switch	216098	Volume Up
	SW03	Switch	216098	Volume Down
	SW04	Switch	216098	Channel Up
	SW05	Switch	216098	Channel Down
	SW06	Switch	216098	Menu
#	**V101**	CRT	27GDC85X	-
		Adapter	193983	Antenna 75 To 300 Ohms
#		Connector	200489	Antenna
		PC Board (1)	225476	CRT
		PC Board (1)	228974	Headphone/Control
#		Socket	224146	CRT
		Transmitter	228007	Remote (CRK10GW1)
		Tuner (1)	223080	UHF/VHF (MTP-M-4006)
		Wedges	161019	Yoke Positioning (3 Used)

 # For SAFETY use only equivalent replacement part.
(1) Contact PTS Electronics Corporation for replacement; order by manufacturer's part number.

POWER SUPPLY SCHEMATIC



SAFETY PRECAUTIONS

SERVICE WARNING

Only qualified service technicians who are familiar with safety checks and guidelines should perform service work. Before replacing parts, disconnect power source to protect electrostatically sensitive parts. Do not attempt to modify any circuit unless so recommended by the manufacturer. When servicing the receiver, use an isolation transformer between the line cord and power receptacle.

SERVICING THE HIGH VOLTAGE AND CRT

Use EXTREME CAUTION when servicing the high voltage circuits. To discharge static high voltage, connect a 10K ohms resistor in series with a test lead between the receiver and CRT anode lead. DO NOT lift the CRT by the neck. Always wear shatterproof goggles when handling the CRT to protect eyes in case of implosion.

X-RAY RADIATION AND HIGH VOLTAGE LIMITS

Be aware of the instructions and procedures covering X-ray radiation. In solid-state receivers and monitors, the CRT is the only potential source of X-rays. Keep an accurate high voltage meter available at all times. Check meter calibration periodically. Whenever servicing a receiver, check the high voltage at various brightness levels to be sure it is regulating properly. Keep high voltage at rated value, NO HIGHER. Excessive high voltage may cause X-ray radiation or failure of associated components. DO NOT depend on protection circuits to keep voltage at rated value. When troubleshooting a receiver with excessive high voltage, avoid close contact with the CRT. DO NOT operate the receiver longer than necessary. To locate the cause of excessive high voltage, use a variable AC transformer to regulate voltage. In present receivers, many electrical and mechanical components have safety related characteristics which are not detectable by visual inspection. Such components are identified by a # on both the schematic and the parts list. For SAFETY, use only equivalent replacement parts when replacing these components.

GENERAL GUIDELINES

Perform a final SAFETY CHECK before returning receiver to customer. Check repaired area for poorly soldered connections, and check entire circuit board for solder splashes. Check inner board wiring for pinched wires or wires contacting any high wattage resistors. Check that all control knobs, shields, covers, grounds, and mounting hardware have been replaced. Be sure to replace all insulators and restore proper lead dress.

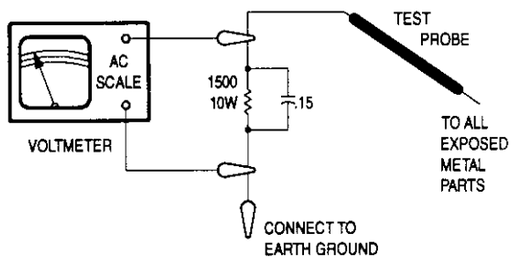
SAFETY CHECKS – FIRE AND SHOCK HAZARD

Cold Leakage Checks for Receivers with Isolated Ground

Unplug the AC cord, connect a jumper across the plug prongs, and turn the power switch on (if applicable). Use an ohmmeter to measure the resistance between the jumped AC plug and any exposed metal cabinet parts such as antenna screw heads, control shafts, or handle brackets. Exposed metal parts with a return path should measure between 1M ohms and 5.2M ohms. Parts without a return path must measure infinity.

Hot Leakage Current Check

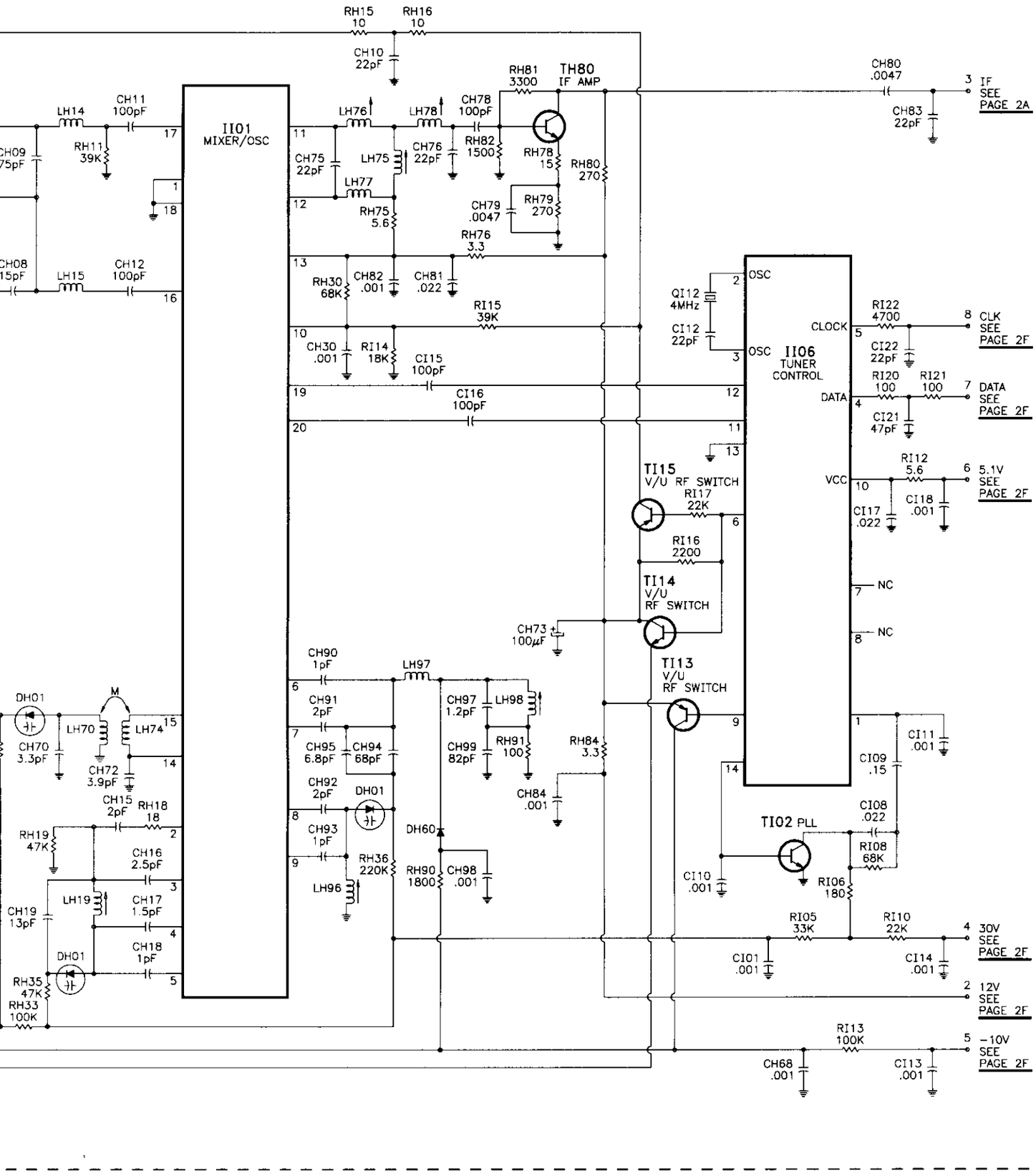
Plug the AC cord directly into an AC outlet. DO NOT use an isolation transformer. Use a 1500 ohms, 10W resistor in parallel with a .15μF capacitor to connect between any exposed metal parts on the receiver and a good earth ground. (See figure below.) Use an AC voltmeter with at least 5000 ohms per volt sensitivity to measure the voltage across the resistor. Check all exposed metal parts and measure voltage at each point. Voltage measurements should not exceed .75VAC, 500μA. Any value exceeding this limit constitutes a potential shock hazard and must be corrected. If the AC plug is not polarized, reverse the AC plug and repeat exposed metal part voltage measurement at each point.



HIGH VOLTAGE SHUTDOWN TEST

Apply 120VAC. Connect a jumper wire to XRP1 and XRP2. The set should go into shutdown, losing picture and sound. If set does not go into shutdown the shutdown circuit requires repair. To resume normal operation, remove jumper wire.

ER SCHEMATIC



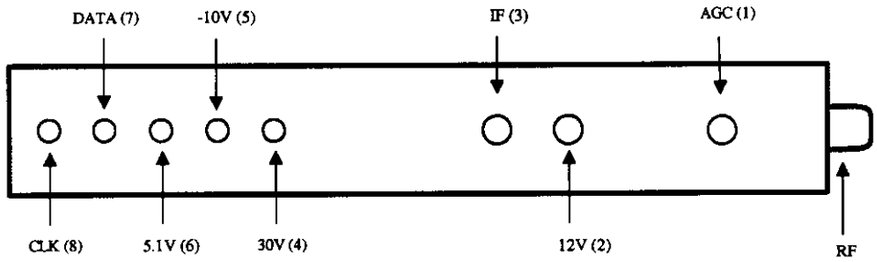
TUNER INFORMATION

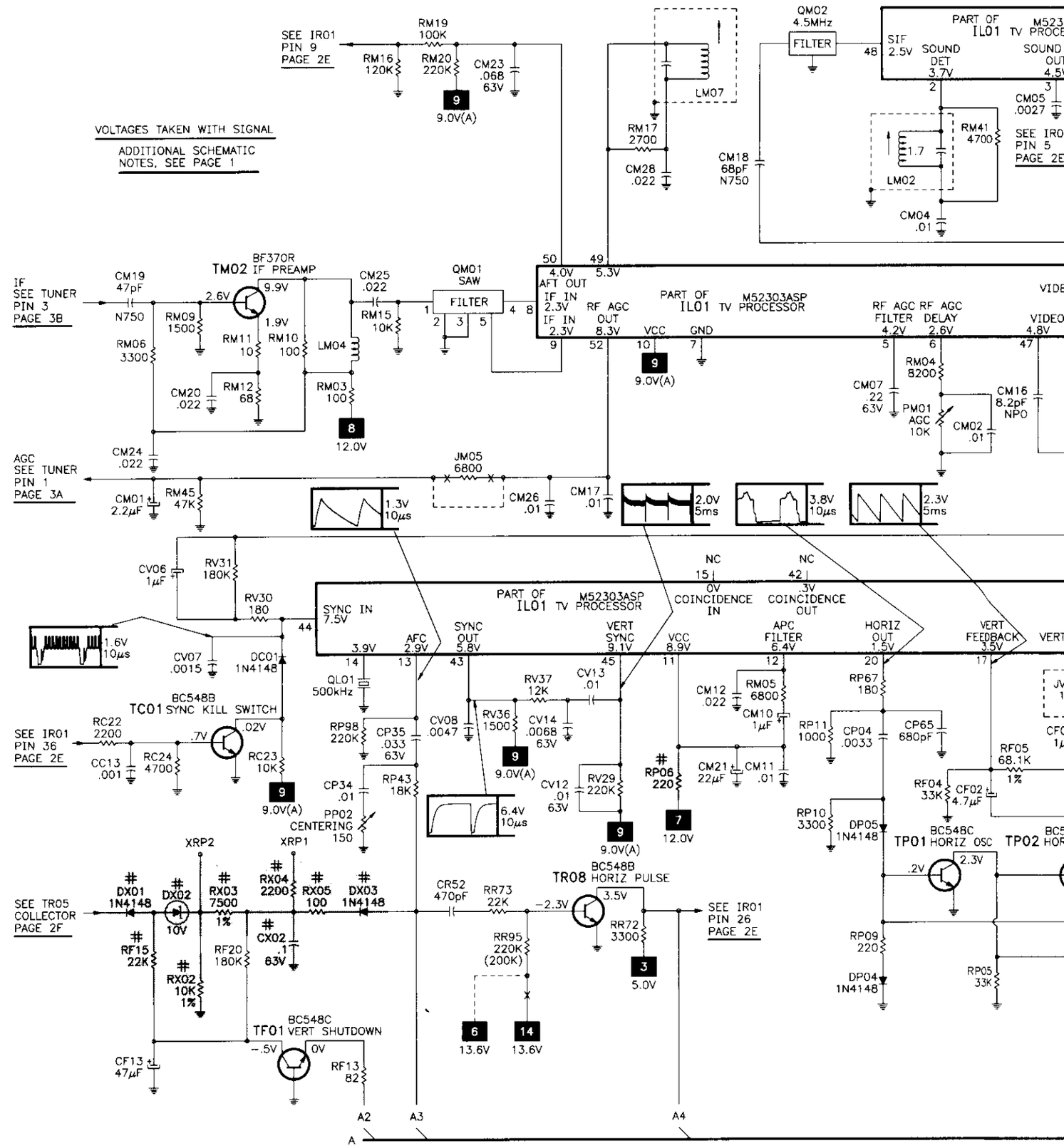
TUNER VOLTAGE CHART

Pin	VHF Low Band	VHF High Band	UHF Band
AGC (1)	7.1V	7.2V	7.2V
12V (2)	12.0V	12.0V	12.0V
IF (3)	0V	0V	0V
30V (4)	33.3V	33.4V	33.4V
-10V (5)	-11.8V	-5.9V	-11.8V
5.1V (6)	5.0V	5.0V	5.0V
DATA (7)	5.0V	5.0V	5.0V
CLK (8)	5.0V	5.0V	5.0V

NOTE: VHF Low Band voltages taken on channel 2.
VHF High Band voltages taken on channel 7.
UHF Band voltages taken on channel 14.

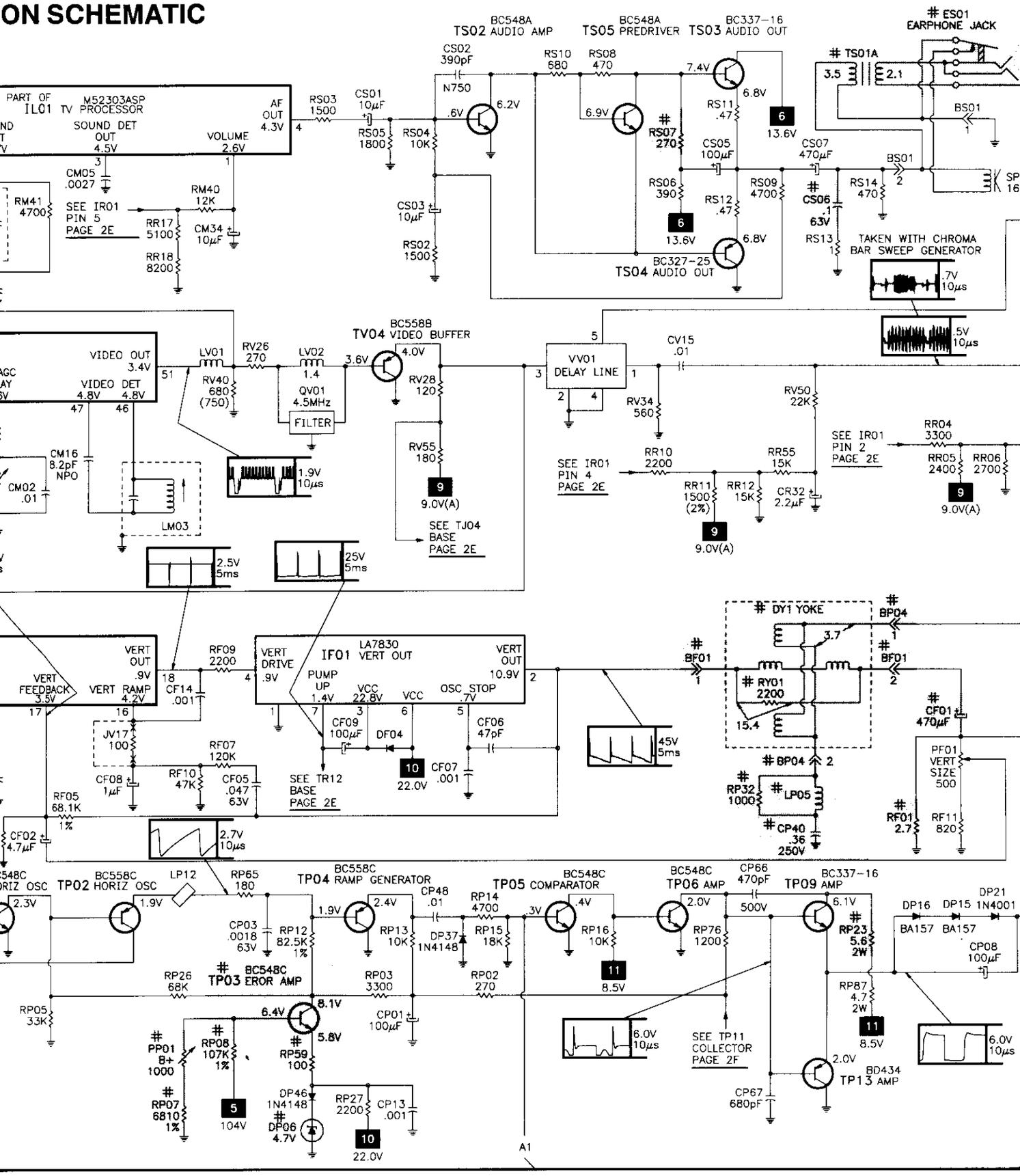
TUNER TERMINAL GUIDE

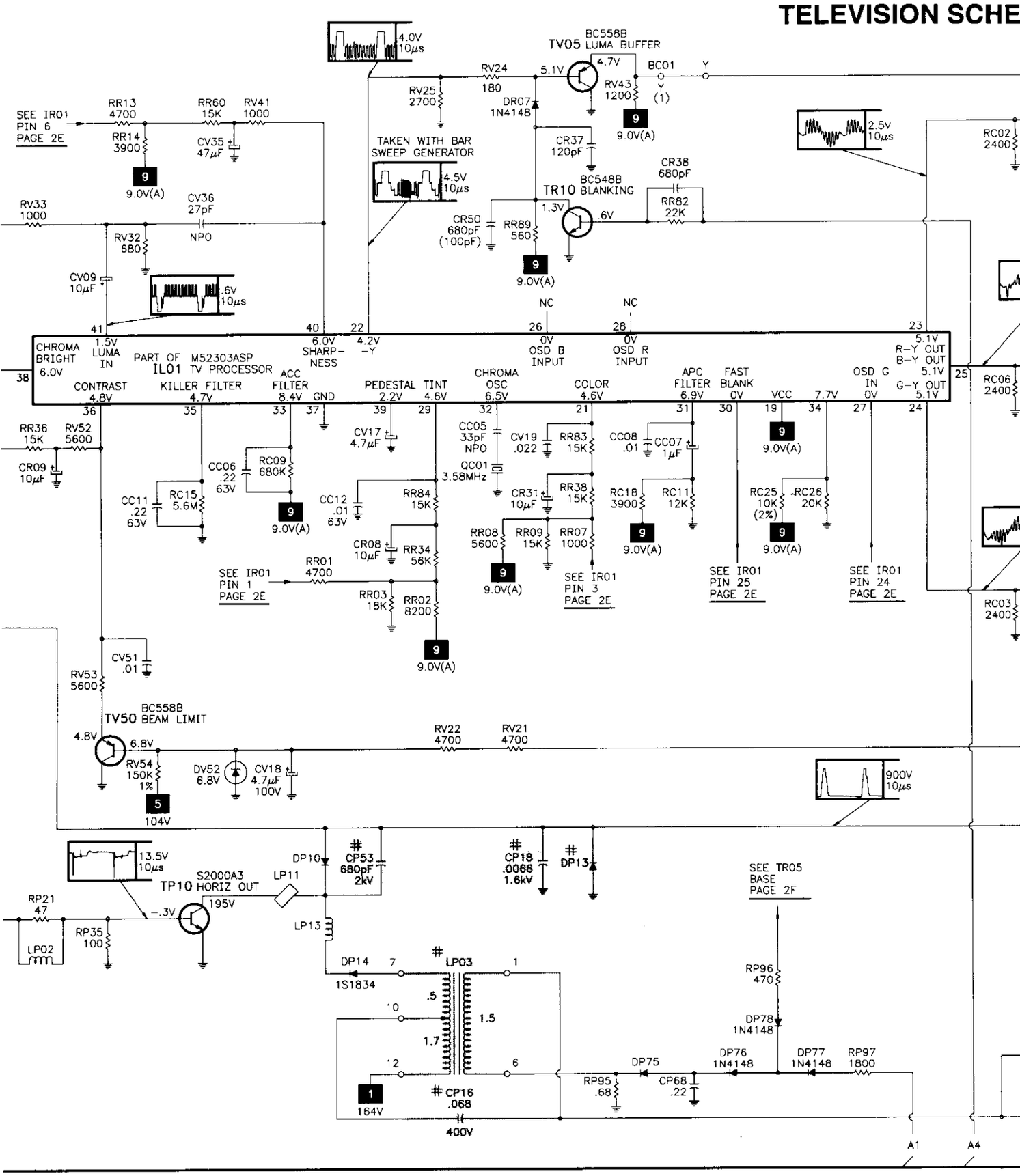
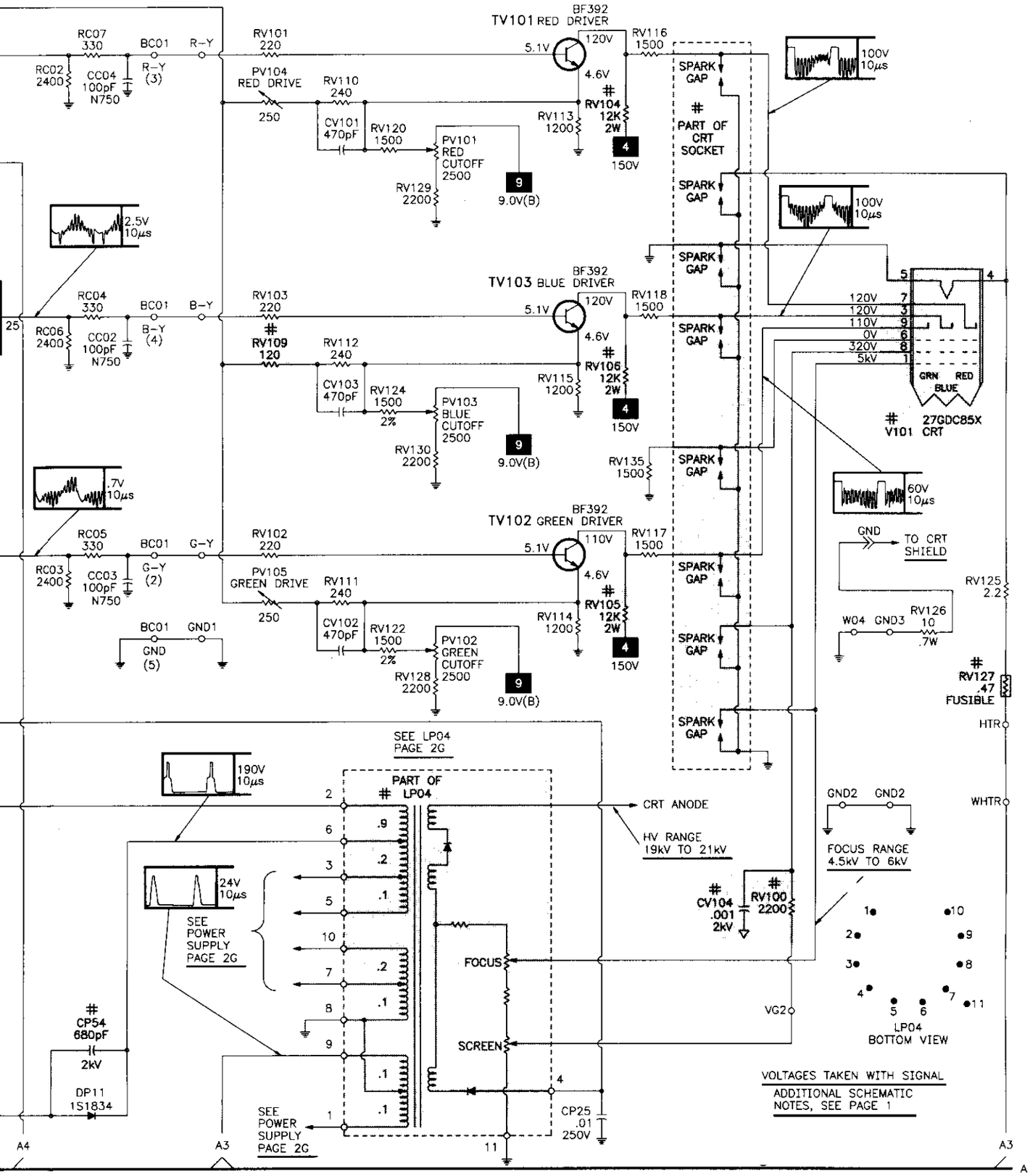



VOLTAGES TAKEN WITH SIGNAL
ADDITIONAL SCHEMATIC NOTES, SEE PAGE 1
SEE IR01 PIN 9 PAGE 2E
RM19 100K
RM16 120K
RM20 220K
CM23 .068 63V
9.0V(A)
LM07
RM17 2700
CM28 .022
QM02 4.5MHz
FILTER
PART OF IL01 TV PROCE
SIF 2.5V
SOUND DET 3.7V
SOUND OUT 4.5V
CM05 .0027
RM41 4700
1.7
LM02
CM04 .01
CM18 68pF N750
SEE IR0 PIN 5 PAGE 2E
IF SEE TUNER PIN 3 PAGE 3B
CM19 47pF
N750
TM02 BF370R IF PREAMP
2.6V
9.9V
1.9V
RM09 1500
RM06 3300
RM11 10
RM10 100
LM04
CM20 .022
RM12 68
RM03 100
8
12.0V
CM25 .022
RM15 10K
QM01 SAW FILTER
50
49
4.0V AFT OUT
5.3V
IF IN 2.3V
IF IN 2.3V
RF AGC OUT 8.3V
PART OF IL01 TV PROCESSOR M52303ASP
VCC
GND
9.0V(A)
RF AGC FILTER 4.2V
RF AGC DELAY 2.6V
VIDEO 4.8V
RM04 8200
CM07 .22 63V
PM01 AGC 10K
CM02 .01
CM16 8.2pF NPO
AGC SEE TUNER PIN 1 PAGE 3A
CM24 .022
CM01 2.2µF
RM45 47K
JM05 6800
1.3V 10µs
CM26 .01
CM17 .01
2.0V 5ms
3.8V 10µs
2.3V 5ms
CV06 1µF
RV31 180K
RV30 180
NC
NC
PART OF IL01 TV PROCESSOR M52303ASP
SYNC IN 7.5V
0V COINCIDENCE IN
.3V COINCIDENCE OUT
1.6V 10µs
CV07 .0015
DC01 1N4148
3.9V
AFC 2.9V
SYNC OUT 5.8V
VERT SYNC 9.1V
VCC 8.9V
APC FILTER 6.4V
HORIZ OUT 1.5V
VERT FEEDBACK 3.5V
QL01 500kHz
RV37 12K
CV13 .01
CM12 .022
RM05 6800
CM10 1µF
RP67 180
BC548B TC01 SYNC KILL SWITCH
SEE IR01 PIN 36 PAGE 2E
RC22 2200
.7V
.02V
CC13 .001
RC24 4700
RC23 10K
9.0V(A)
RP98 220K
CP35 .033 63V
CV08 .0047
RV36 1500
CV14 .0068 63V
RP11 1000
CP04 .0033
CP65 680pF
RF05 68.1K 1%
CP34 .01
RP43 18K
PP02 CENTERING 150
6.4V 10µs
CV12 .01 63V
RV29 220K
RP06 220
CM21 22µF
CM11 .01
RF04 33K
CF02 4.7µF
RP10 3300
DP05 1N4148
BC548C TP01 HORIZ OSC
TP02 HOR
2.3V
.2V
XRP2
XRP1
DX01 1N4148
DX02 10V
RX03 7500 1%
RX04 2200
RX05 100
DX03 1N4148
BC548B TR08 HORIZ PULSE
CR52 470pF
RR73 22K
-2.3V
3.5V
SEE TR05 COLLECTOR PAGE 2F
SEE IR01 PIN 26 PAGE 2E
RF15 22K
RF20 180K
CX02 .1 63V
RR95 220K (200K)
RR72 3300
5.0V
RP09 220
DP04 1N4148
RP05 33K
RX02 10K 1%
BC548C TF01 VERT SHUTDOWN
-.5V
0V
RF13 82
CF13 47µF
6
13.6V
14
13.6V
A2
A3
A4
A

ON SCHEMATIC

B




4.0V 10µs
BC558B
TV05 LUMA BUFFER
4.7V
5.1V
RV24 180
BC01 Y
Y (1)
RV43 1200
9.0V(A)
RV25 2700
DR07 1N4148
CR37 120pF
SEE IR01 PIN 6 PAGE 2E
RR13 4700
RR60 15K
RV41 1000
RR14 3900
CV35 47µF
TAKEN WITH BAR SWEEP GENERATOR
4.5V 10µs
BC548B
TR10 BLANKING
CR38 680pF
RR82 22K
1.3V
.6V
CR50 680pF (100pF)
RR89 560
2.5V 10µs
RC02 2400
RV33 1000
CV36 27pF NPO
RV32 680
CV09 10µF
.6V 10µs
NC
NC
CHROMA BRIGHT 6.0V
1.5V LUMA IN
PART OF M52303ASP
IL01 TV PROCESSOR
6.0V SHARP-NESS
4.2V -Y
0V OSD B INPUT
0V OSD R INPUT
5.1V R-Y OUT B-Y OUT G-Y OUT
CONTRAST 4.8V
KILLER FILTER 4.7V
ACC FILTER 8.4V
GND
PEDESTAL 2.2V
TINT 4.6V
CHROMA OSC 6.5V
COLOR 4.6V
APC FILTER 6.9V
FAST BLANK 0V
VCC 7.7V
OSD G IN 0V
RC06 2400
RR36 15K
RV52 5600
CR09 10µF
CC11 .22 63V
RC15 5.6M
CC06 .22 63V
RC09 680K
CV17 4.7µF
CC12 .01 63V
RR84 15K
CR08 10µF
RR34 56K
CC05 33pF NPO
QC01 3.58MHz
CV19 .022
RR83 15K
CR31 10µF
RR38 15K
RR08 5600
RR09 15K
RR07 1000
CC08 .01
CC07 1µF
RC18 3900
RC11 12K
RC25 10K (2%)
RC26 20K
SEE IR01 PIN 1 PAGE 2E
RR01 4700
RR03 18K
RR02 8200
SEE IR01 PIN 3 PAGE 2E
SEE IR01 PIN 25 PAGE 2E
SEE IR01 PIN 24 PAGE 2E
RC03 2400
CV51 .01
RV53 5600
BC558B
TV50 BEAM LIMIT
4.8V
6.8V
RV22 4700
RV21 4700
RV54 150K 1%
DV52 6.8V
CV18 4.7µF 100V
104V
900V 10µs
13.5V 10µs
S2000A3
TP10 HORIZ OUT
195V
-.3V
DP10
LP11
CP53 680pF 2kV
CP18 .0066 1.6kV
DP13
SEE TR05 BASE PAGE 2F
RP21 47
RP35 100
LP02
LP13
DP14
1S1834
LP03
.5
1.5
1.7
RP96 470
DP78 1N4148
DP76 1N4148
DP77 1N4148
RP97 1800
DP75
RP95 .68
CP68 .22
CP16 .068
400V
164V
A1
A4

SCHEMATIC continued